



PATIENT

Cranberry Ruffin

SPECIES

Canine

BREED

Terrier Mix

SEX

FS

AGE

3 years, 10 months

WEIGHT

40 lbs.

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP
(Canine and Feline)

IMAGING PERFORMED BY

Kelly Vazquez

PRESENTING CLINICAL SIGNS

Patient presents due to heartworm AG positive; microfilaria (neg). Radiographs revealed pulmonary bronchointerstitial pattern. Patient having clinical issues, coughing, exercise intolerance), so echo recommended before treatment.

Abnormal PE/Chem/CBC/UA Results: TP 9.2, glob. 6.5, A/G ratio 0.4, WBC 23.2, -slight polychromasia, lymphs 5104, monos 1624, Ca 67.28, basos 464. USG: 1.027.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT		4.0	1.3	1.3	44	79	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m- mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	101	1.3	1.2		2.6	2.3	

Cardiac Presentation

HOSPITAL NAME

Mildand Park VH

REFERRING VET

Dr. John Shokoff

INVOICE

15743

DATE

12/29/22

The **echocardiogram** in this patient demonstrated mild to moderate prominent **right ventricle** with mild **right ventricle** hypertrophy, evidence of moderate TR on Doppler with concurrent mild to moderated increased **right atrial** size. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** exhibited uniform mild to moderate enlargement with normal measured RVOT velocity. Several definitive heartworms were noted in the deep main pulmonary artery, as well as the pulmonary artery branches. Normal laminar systolic pulmonary outflow with moderate pulmonic insufficiency was present on Doppler measuring 3.0 m/s end-diastolic velocity. Normal appearance to the pulmonic valve was noted. No evidence of Caval syndrome without evidence of visible heartworms crossing the tricuspid valve. The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** was not significantly insufficient, and no significant **left atrial** dilation was noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory



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mediastinal tissue. No evident arrhythmic activity was noted during the exam. brief sonographic assessment of the liver and caudal vena cava revealed no evidence of congestive criteria.

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ULTRASONOGRAPHIC FINDINGS

- Confirmed heartworm disease
- Mild to moderate RA/RV enlargement
- Enlarged pulmonary artery to level of pulmonary artery branches
- TR with concurrent pulmonic insufficiency - estimated pulmonary pressure gradient suggestive of moderate pulmonary hypertension

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

3 years, 10 months

The right heart changes, as well as evidence of moderate pulmonary hypertension, are likely due to the physical presence of heartworms in this case. This may suggest at least moderate to possible significant heartworm disease.

WEIGHT

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A cardiology consult could be considered as to whether medical therapy for moderate pulmonary hypertension is indicated. However, given the likelihood of pulmonary hypertension secondary to the physical presence of heartworms, initiation of heartworm therapy which may include empirical Prednisone and Doxycycline followed by heartworm treatment based on American Heartworm Association protocol would be reasonable. A potential guarded prognosis, given right heart and pulmonary artery changes, is indicated.

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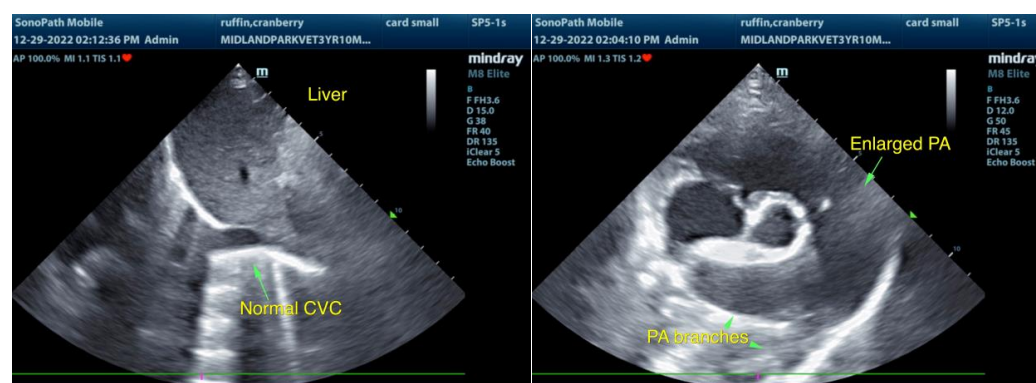
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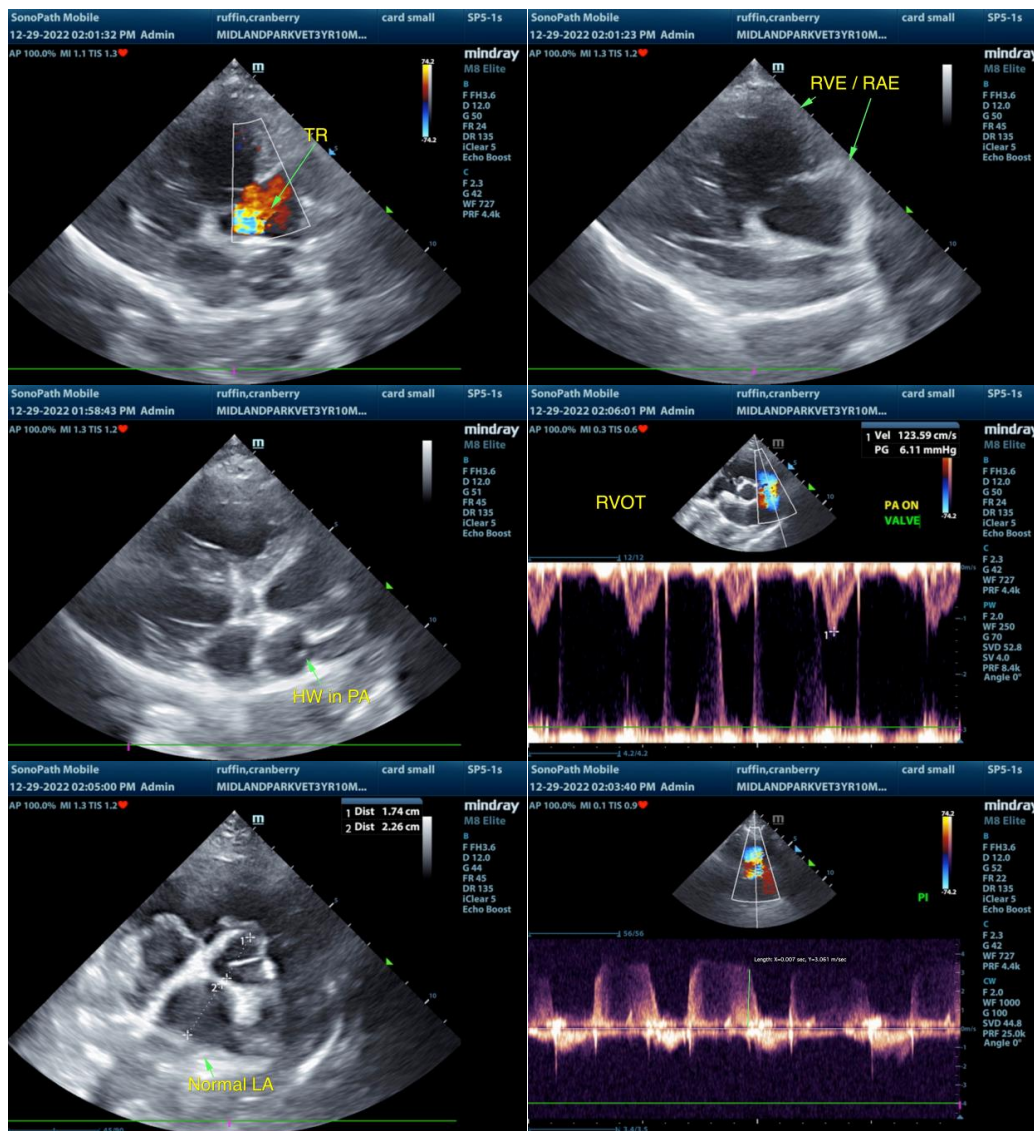
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com